

AMENDMENT TO THE CLAIMS

Please amend the claims as follows:

Claim 1 (withdrawn): An antifouling detergent comprising a polymer which comprises

a monomer unit A having at least one substituent selected from the group consisting of amino groups and quaternary ammonium groups and

a monomer unit B represented by $-\text{SO}_2-$, and a monomer unit C derived from a monomer selected from the following group:

(i) an anionic group-containing compound selected from acrylic acid or salts thereof, methacrylic acid or salts thereof, maleic acid or salts thereof, maleic anhydride, styrene sulfonate, 2-acrylamido-2-methylpropanesulfonate, allyl sulfonate, vinyl sulfonate, methallyl sulfonate, sulfopropyl methacrylate, and mono- ω -methacryloyloxyalkyl(C1 to 12) phosphate,

(ii) an amide group-containing compound selected from acryl(or methacryl)amide, N,N-dimethylaminopropylacryl(or methacryl)amide, N,N-dimethylacryl(or methacryl)amide, N,N-dimethylaminoethylacryl(or methacryl)amide, N,N-dimethylaminomethylacryl(or methacryl)amide, N-vinyl-2-caprolactam, and N-vinyl-2-pyrrolidone,

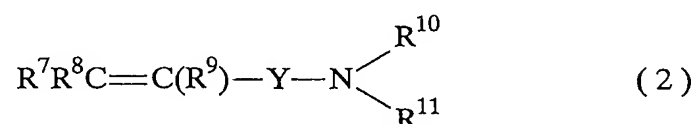
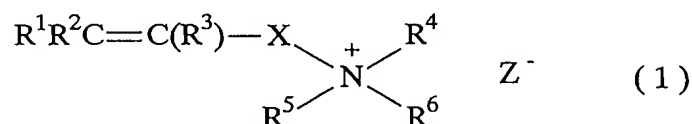
(iii) an ester group-containing compound selected from alkyl(C1 to C5) acrylate(or methacrylate), 2-hydroxyethyl acrylate(or methacrylate), N,N-dimethylaminoalkyl(C1 to 5) acrylate(or methacrylate), and vinyl acetate, and

(iv) an olefinic compound selected from ethylene, propylene, n-butylene, isobutylene, n-pentene, isoprene, 2-methyl-1-butene, n-hexene, 2-methyl-1-pentene, 3-methyl-1-pentene, 4-methyl-1-pentene, 2-ethyl-1-butene, styrene, vinyl toluene and α -methylstyrene

wherein the content of the monomer unit A in the whole monomer units is 10 to 99 mol-% wherein

the molar ratio of the monomer unit B to the monomer unit A is from 0.01 to 1.

Claim 2 (Withdrawn): The antifouling detergent according to claim 1, wherein the monomer unit A is selected from a compound represented by the general formula (1) and/or a compound represented by the general formula (2):



wherein R^1 , R^2 , R^3 , R^7 , R^8 and R^9 each represent a hydrogen atom, a hydroxyl group or a C_{1-3} alkyl group;

X and Y are independently selected from the group consisting of a C_{1-12} alkylene group, $-\text{COOR}^{12}-$, $-\text{CONHR}^{12}-$, $-\text{OCOR}^{12}-$ and $-\text{R}^{13}-\text{OCO}-\text{R}^{12}-$ wherein R^{12} and R^{13} each represent a C_{1-5} alkylene group;

R^4 represents a C_{1-3} alkyl group, a C_{1-3} hydroxyalkyl group or $\text{R}^1\text{R}^2\text{C}=\text{C}(\text{R}^3)-\text{X}-$;

R^5 represents a C_{1-3} alkyl group, a C_{1-3} hydroxyalkyl group or a benzyl group;

R^6 represents a C_{1-10} alkyl group optionally substituted with a hydroxy group, a carboxyl group, a sulfonate group, a sulfate group or a benzyl group, wherein when R^6 comprises an alkyl group, a hydroxyalkyl group or a benzyl group, Z^- represents an anion and when R^6 comprises a carboxyl group, a sulfonate group and a sulfate group, Z^- is absent, but R^6 are anions;

R^{10} represents a hydrogen atom, a C_{1-3} alkyl group, a C_{1-3} hydroxyalkyl group or $\text{R}^7\text{R}^8\text{C}=\text{C}(\text{R}^9)-\text{Y}-$; and

R^{11} represents a hydrogen atom, a C_{1-3} alkyl or a C_{1-3} hydroxyalkyl group.

Claim 3 (withdrawn): An antifouling detergent composition comprising the antifouling detergent as claimed in claim 1 and a surfactant.

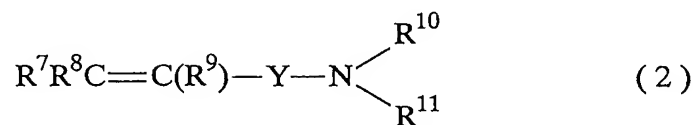
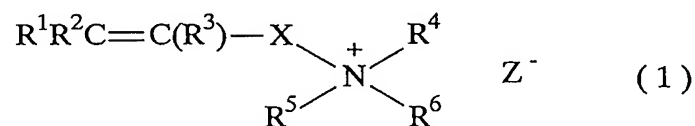
Claim 4 (withdrawn): The antifouling detergent composition according to claim 3, wherein the surfactant is a cationic surfactant.

Claims 5-7 (canceled):

Claim 8 (currently amended): A method of treating a hard surface comprising treating a hard surface with an antifouling detergent composition comprising an antifouling detergent and a cationic surfactant, wherein said antifouling detergent comprises a polymer which comprises

a monomer unit A

derived from a compound represented by the general formula (1) and/or a compound represented by the general formula (2):



wherein R^1 , R^2 , R^3 , R^7 , R^8 and R^9 each represent a hydrogen atom, a hydroxyl group or a C_{1-3} alkyl group;

X and Y are independently selected from the group consisting of a C₁₋₁₂ alkylene group, -COOR¹²-, -CONHR¹²-, -OCOR¹²- and -R¹³-OCO-R¹²- wherein R¹² and R¹³ each represent a C₁₋₅ alkylene group;

R⁴ represents a C₁₋₃ alkyl group, a C₁₋₃ hydroxyalkyl group or R¹R²C=C(R³)-X-;

R⁵ represents a C₁₋₃ alkyl group, a C₁₋₃ hydroxyalkyl group or a benzyl group;

R⁶ represents a C₁₋₁₀ alkyl group optionally substituted with a hydroxy group, a carboxyl group, a sulfonate group, a sulfate group or a benzyl group, wherein when R⁶ comprises an alkyl group, a hydroxyalkyl group or a benzyl group, Z⁻ represents an anion and when R⁶ comprises a carboxyl group, a sulfonate group and a sulfate group, Z⁻ is absent, but R⁶ are anions;

R¹⁰ represents a hydrogen atom, a C₁₋₃ alkyl group, a C₁₋₃ hydroxyalkyl group or R⁷R⁸C=C(R⁹)-Y-; and

R¹¹ represents a hydrogen atom, a C₁₋₃ alkyl or a C₁₋₃ hydroxyalkyl group and a monomer unit B represented by -SO₂-, and

a monomer unit C derived from a at least one monomer selected from the following group:

~~(i) an anionic group containing compound selected from~~ consisting of acrylic acid or salts thereof, methacrylic acid or salts thereof, maleic acid or salts thereof, maleic anhydride, styrene sulfonate, 2-acrylamido-2-methylpropanesulfonate, allyl sulfonate, vinyl sulfonate, methallyl sulfonate, sulfopropyl methacrylate, and mono- ω -methacryloyloxyalkyl(C1 to 12) phosphate;

~~(ii) an amide group containing compound selected from acryl(or methacryl)amide, N,N-dimethylaminopropylacryl(or methacryl)amide, N,N-dimethylacryl(or methacryl)amide, N,N-dimethylaminoethylacryl(or methacryl)amide, N,N-dimethylaminomethylacryl(or methacryl)amide, N-vinyl-2-caprolactam, and N-vinyl-2-pyrrolidone;~~

~~(iii) an ester group containing compound selected from alkyl(C1 to C5) acrylate(or methacrylate), 2-hydroxyethyl acrylate(or methacrylate), N,N-dimethylaminoalkyl(C1 to 5) acrylate(or methacrylate), and vinyl acetate, and~~

~~(iv) an olefinic compound selected from ethylene, propylene, n-butylene, isobutylene, n-pentene, isoprene, 2-methyl-1-butene, n-hexene, 2-methyl-1-pentene, 3-methyl-1-pentene, 4-methyl-1-pentene, 2-ethyl-1-butene, styrene, vinyl toluene and α -methylstyrene~~

wherein the content of the monomer unit A in the whole monomer units is 30 to ~~99~~ 90 mol-% wherein

the molar ratio of the monomer unit B to the monomer unit A is from 0.01 to 1,

the molar ratio of the monomer unit C to the monomer unit A is from 0.05 to 1 and

wherein the surface comprises the surface of a toilet bowl.

Claim 9 (canceled):

Claim 10 (currently amended) ~~the~~ The method of claim 8, wherein ~~said a~~
concentration of said polymer is 0.01 to 35 mass percent.

Claim 11 (previously presented) The method of claim 8, wherein said antifouling detergent composition is a liquid.

Claim 12 (new) The method of claim 8, wherein said surface of a toilet bowl is a glazed surface.

Claim 13 (new) The method of claim 8, wherein monomer (C) further comprises at least one monomer selected from the group consisting of

(ii) an amide group-containing compound selected from acryl(or methacryl)amide, N,N-dimethylaminopropylacryl(or methacryl)amide, N,N-dimethylacryl(or methacryl)amide, N,N-dimethylaminoethylacryl(or methacryl)amide, N,N-dimethylaminomethylacryl(or methacryl)amide, N-vinyl-2-caprolactam, and N-vinyl-2-pyrrolidone,

(iii) an ester group-containing compound selected from alkyl(C1 to C5) acrylate(or methacrylate), 2-hydroxyethyl acrylate(or methacrylate), N,N-dimethylaminoalkyl(C1 to 5) acrylate(or methacrylate), and vinyl acetate, and

(iv) an olefinic compound selected from ethylene, propylene, n-butylene, isobutylene, n-pentene, isoprene, 2-methyl-1-butene, n-hexene, 2-methyl-1-pentene, 3-methyl-1-pentene, 4-methyl-1-pentene, 2-ethyl-1-butene, styrene, vinyl toluene and α -methylstyrene.